AIA 21A5

Superlite Perlite

THE IDEAL LIGHTWEIGHT AGGREGATE FOR

Plaster Insulating Concrete

"TAKES A LOAD OFF THE WALL"
Superlite
Perlite
A Superior
LIGHTWEIGHT
PLASTER AND CONCRETE
AGGREGATE
USE IN PLACE OF SAND
CONTENTS 4 CUBIC FEET
DIRECTIONS FOR MIXING
PLASTER SCRATCH COAT-MIX 2 CU. FT. PERLITE & 1 BAG GYPSUM PLASTER
PLASTER BROWN COAT-MIX 2½ CU. FT. PERLITE & 1 BAG GYPSUM PLASTER
FOR CONCRETE, MIX ACCORDING TO STRENGTH REQUIRED
TAKE SAME PRECAUTIONS TO PROTECT AGAINST SWEAT-OUTS AND DRY-OUTS AS WHEN USING ORDINARY SAND
LIGHTWEIGHT •REDUCES DEAD LOAD
EASY TO APPLY RESISTS CRACKING
INSULATES AGAINST HEAT •COLD •SOUND
FIREPROOF
PERLITE PRODUCTS COMPANY
PRIMOS (Delaware County) PA.
Phone: MADISON 6-2113

Perlite is manufactured from Volcanic Perlite Rock which, when heated quickly to a precise point in its softening range, expands to form a light weight, glass-like material of cellular structure.

MA-6-2113

PERLITE PRODUCTS

PRIMOS, Delaware County, Pa.

BS LINFOOT

SUPERLITE PERLITE PLASTER INSURES A QUALITY JOB

Check these advantages

- LIGHTER WEIGHT
- SOUND ABSORPTION
- CRACK RESISTANCE
- MATERIAL SAVINGS
- WORKS EASIER — FASTER
- HIGH THERMAL INSULATION
- FIRE RESISTANCE

RECOMMENDED PROPORTIONS AND QUANTITIES

TYPE OF CONSTRUCTION	Grounds (see note)	Actual Plaster Thickness	Coat	Recommended Volume Proportions	100 Sq. Yards Required Per Coat	
					Bags Plaster	4 cu. ft. bags
Metal Lath	¾	⅜	Scratch	1-2	12	6
		⅜	Brown	1-3	8	6
Gypsum Lath	⅞	½	Scratch & Brown	1-2½	9	6
Masonry	⅝	¼	Scratch	1-4	5	5
		⅜	Brown	1-3	8	6

Note: Grounds attached to studs, joists or channels—not the lath. Size-Graded to conform to A.S.T.M. Specifications (C-35-39) & ASA A42.1 for Perlite aggregate.

Superlite Perlite for setting ceramic wall tile

Specifications: Scratch Coat shall consist of one bag Portland Cement; 3 cu. ft. Superlite Perlite; and ¼ to ½ bag hydrated lime.

Finish Coat (or actual setting of tile in place) shall consist of 1 bag Portland Cement; 4 cu. ft. Superlite Perlite and ½ bag hydrated lime.

TCAT 195- Perlite ocn 852997125 7/17/13

Superlite Perlite weighs only 7½ lbs. per cu. ft. Packed 3 cu. ft. or 4 cu. ft. to the bag (22½ lbs. or 30 lbs.) for accurate measure. No waste—no freezing—easy to handle.

Superlite Perlite figuratively blankets walls and ceilings with tiny, sound absorbing chambers which soak up noise.

Superlite Perlite resiliency reduces structural plaster cracking—you can drive nails into Perlite plaster without chipping or cracking.

Plaster with Superlite Perlite aggregate weighs only 1/3 as much as sanded plaster. This great difference in weight and the method of fireproofing using plaster instead of solid concrete sharply cuts structural material requirements.

Superlite Perlite, being extremely lightweight, makes work easier and less tiresome. Perlite has the workable characteristics of sand—no new techniques or tools needed.

The multiplicity of "sealed" dead air cells in Superlite Perlite gives plaster a high k factor of approximately .80 puts thermal insulation on inside walls and ceilings where most effective.

Application of plaster with Superlite Perlite aggregate having highest fire ratings replaces the slow, more costly fire-proofing method of imbedding structural steel in heavy concrete.

Elevator shafts, stair wells and corridors, etc., can be fireproofed without thick heavy masonry.

official fire ratings (Per ASTM E-119)

RATING	DESCRIPTION*	REPORT NO. & AUTHORITY
4 Hours	1-¾" of Perlite-gypsum plaster on face of self-furring metal lath wrapped around column with expanded metal corner beads adjusted for the required plaster thickness.	3187-4 Underwriters' Laboratories
	FLOORS and CEILINGS	
4 Hours	Floor and beam construction consisting of steel floor units mounted on steel members with 2" Perlite concrete top flooring. Metal lath suspended ceiling spaced at least 3" from the steel members and covered with Perlite-gypsum plaster 1" thick over face of lath.	2993 Underwriters' Laboratories
4 Hours	Suspended ceiling of 1" thick Perlite-gypsum plaster on face of metal lath spaced at least 3" from non-combustible structural members without a finished floor above. (NOTE: This rating applies to suspended ceilings beneath poured or precast concrete roofs, gypsum roofs, auditorium ceilings, etc.)	2993-5 Underwriters' Laboratories
4 Hours	Floor and beam construction consisting of cellular steel floor units mounted on steel members with 2" conventional concrete top flooring. Metal lath ceiling suspended beneath beams and ducts, and covered with Perlite-gypsum plaster 7/8" thick on face of the lath. Duct openings not to exceed 70 sq. in. per 100 sq. ft. of ceiling; no more than one electrical outlet per 90 sq. ft. of ceiling.	3355 Underwriters' Laboratories
	WALLS and PARTITIONS	
2 Hours	2-½" thick non load-bearing solid partition of Perlite-gypsum plaster on a base of expanded metal lath supported by ¾" cold-rolled steel channels set into floor base clips and ceiling runners.	3453 Underwriters' Laboratories
1 Hour Combustible	Hollow load bearing partition of 2 x 4 wood studs, 16" on centers, protected on both sides with ½" thick Perlite-gypsum plaster over 3/8" perforated gypsum lath.	2896 Underwriters' Laboratories
½ Hour Combustible	Interior finish on one face of wood studs in partitions or walls protected on one side with ½" Perlite-gypsum plaster on 3/8" perforated gypsum lath.	2896 Underwriters' Laboratories

SUPERLITE PERLITE INSULATING CONCRETE

HIGH THERMAL INSULATION
LIGHTER WEIGHT

Lightweight Superlite Perlite concrete is of great importance to the building industry. Superlite Perlite concrete aggregate is one of the most versatile materials available to architects and builders. In combination with Portland Cement, it forms the lightest of all mineral concrete.

Lightweight Superlite Perlite concrete fill is an ideal material for roof insulation over structural roof decks or poured monolithically and properly reinforced over paper backed welded wire mesh, ribbed metal lath, or other structural supporting forms.

Superlite Perlite concrete fill has a high insulating value and sufficient strength to withstand all normal traffic, snow load requirements, etc., on roofs.

Superlite Perlite concrete screeds smooth in one operation; forms a hard surface, free from flaking, assuring a good bond for the built up roofing

In larger buildings, lightweight Superlite Perlite concrete is a highly efficient material when used as a lightweight floor fill over cellular steel or pan floors. It is usually covered with a suitable wearing surface to resist abrasion.

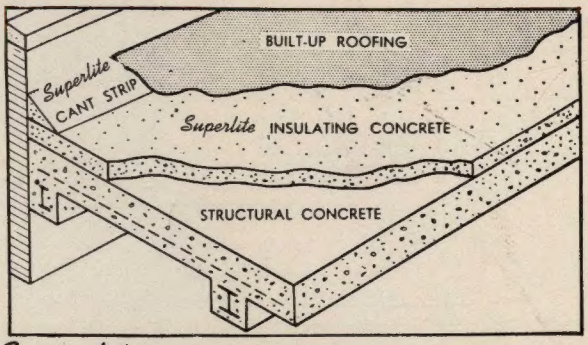
In basementless homes Superlite Perlite insulating concrete makes one of the most efficient, permanent ground level floor slabs.

Superlite Perlite concrete is highly suited for efficient insulation in floor or roof construction of dairy barns, poultry houses, hog houses, milk coolers, and walk-in freezers.

The amount of heat transmitted through Superlite Perlite concrete varies with the weight or density. Heavy concrete has poorer insulating value than lightweight concrete. Whereas, sand gravel concrete weighing 150 lbs./cu. ft. has a thermal conductivity "k" of 12.0 B T U, Superlite Perlite concrete at 22 lbs./cu. ft. dry density has a "k" of only .62 B T U

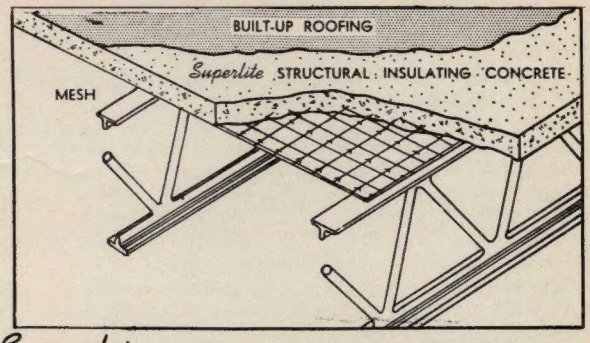
The compressive strength of Superlite Perlite concrete is related to the oven dry density of the concrete. The typical relationship of compressive strength to weight (oven dry density) is tabulated on next page.

SUPERLITE CONCRETE ROOF INSULATION



Superlite Insulating Concrete over Concrete Roof

SUPERLITE CONCRETE ROOF DECKS

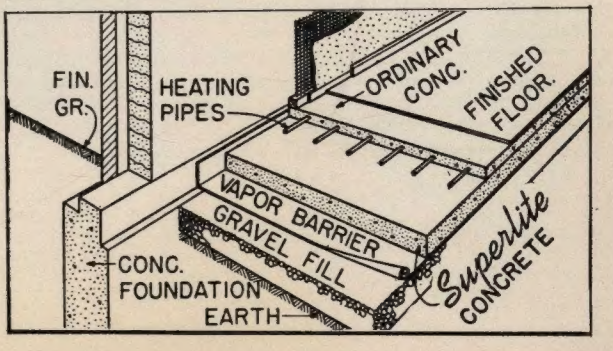


Superlite Concrete over Paper-backed Wire Mesh

A 1 to 4 Perlite concrete laid on metal lath, steeltex, cement asbestos board or corrugated metal over the bar joists makes an ideal roof deck. A 3" Perlite roof would, with bar joist exposed underneath, have a coefficient of transmission "U" of .24 B T U and would weigh only 9 lb. per sq. ft.

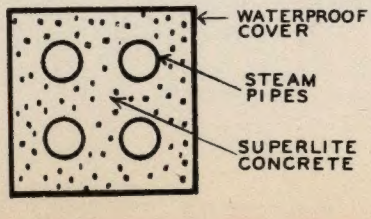
RADIANT HEATING

Superlite Perlite Concrete solves the problems of heat loss into the ground.



STEAM LINE INSULATION

A most economical method of insulating underground steam lines is with Superlite Perlite concrete.



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MIX DESIGN DATA FOR SUPERLITE CONCRETE

TYPICAL PROPERTIES				MIX PROPORTIONS BY VOLUME						MATERIALS REQUIRED PER CUBIC YARD OF CONCRETE			
Mix by Vol.	Compressive Strength 28 Days—(psi)	Density (lbs./cu. ft. Oven Dry)	Thermal Conductivity "k"	Bags Cement	Superlite Aggregate (Cu. Ft.)	Superlite Admix (Pints)	Water Gals. Per Bag Cement	Slump (In.)	Wet Density When Poured (lbs./cu. ft. Approx.)	Cement Bags	Superlite Perlite Cubic Feet	Water (Gals.)	Superlite Admix (Pints)
1 to 4	490	35	.93	1	4	1	9	5	49	8.50	26	58½	6½
1 to 5	280	29	.77	1	5	1¼	11	5	44	5.20	26	57	6½
1 to 6	220	26	.70	1	6	1½	13	5	40	4.33	26	56½	6½
1 to 7	160	24	.65	1	7	1¾	15	5	38	3.70	26	56	6½
1 to 8	125	22	.62	1	8	2	17	5	37	3.25	26	55	6½

SPECIFICATIONS

PLASTER

Materials—SUPERLITE plaster aggregate shall be specially prepared, conforming to the A. S. A. specification. Grading to size shall conform to A S T M specifications (C-35-39).

Plaster Bases—Thoroughly wet down masonry and other absorbent surfaces before applying SUPERLITE plaster.

Mixing—SUPERLITE plaster may be mixed by hand or machine. Machine mix gypsum plaster and water first (using approx. 3 gal. water to each cu. ft. SUPERLITE aggregate). Add SUPERLITE and mix only long enough to insure thorough mixing.

For Hand Mixing: Mix PERLITE and gypsum dry. Add water and hoe dry mix into water to a stiff plaster.

Application—On metal lath, use three-coat work. On clean masonry, gypsum lath or insulating lath. use two-coat work, with coat immediately following scratch coat. Finish coat separately applied, as specified.

Three-Coat Work Over All Types of Lath—Scratch coat, mix not over 2 cu. ft. SUPERLITE aggregate to 100 lbs. (1 bag) gypsum plaster. Brown coat mix not over 3 cu. ft. SUPERLITE aggregate to 100 lbs. (1 bag) gypsum plaster.

Three-Coat Work Over Masonry (except Monolithic)—Mix not over 4 cu. ft. PERLITE plaster aggregate to 100 lbs. (1 bag) gypsum plaster for each coat.

Two-Coat Work Over All Plaster Bases (except wire, metal or wood lath)—Entire base may be applied "double-up" or "lay-on" method. Mix not over 2½ cu. ft. of SUPERLITE PERLITE plaster aggregate to 100 lbs. (1 bag) gypsum plaster.

Two-Coat Work Over Masonry—Mix shall not be more than 4 cu. ft. (1 bag) PERLITE plaster Aggregate to 100 lbs. (1 bag) gypsum plaster. Apply using "double-up" method.

Finish Coat—For finish coat over the foregoing, use regular standard plaster finish. Apply finish coat before brown coat has dried out; otherwise thoroughly soak wall with water before finish coat is applied. Application of sand finish, putty coat, or texture over PERLITE brown coat shall be the same standard practice as over sand plaster brown coat.

Temperature and Ventilation—It is inadvisable to apply PERLITE plaster in temperatures below 40 F. Controlled drying should be used after application so that the plaster will begin to dry after setting and continue until thoroughly dry. Avoid too rapid drying in hot weather; provide proper ventilation and adequate heat in cold weather.

PERLITE PLASTER AGGREGATE contains no impurities. This may result in slow setting, allowing the plaster to dry out before proper set occurs, particularly on hot windy days. Any standard accelerator may be used to prevent this condition.

Recommended setting period 3-4 hrs., not more than 4 hrs.

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INSULATING CONCRETE

typical short form specification

1. Recommendations — SUPERLITE INSULATING CONCRETE shall have a dry density from 22 to 35 lbs./cu. ft.

2. Materials —

a. Cement may be Type I, Type II or Type III Portland Cement meeting the requirements of ASTM Spec. C-150.

b. Aggregate — shall be SUPERLITE concrete aggregate, weighing from 7 to 12 lbs. per cu. ft., meeting specifications of ASTM.

c. Air entraining admixture shall be a standard solution supplied by the manufacturer of the Perlite.

d. Water shall be free from any materials harmful to concrete, preferably potable.

3. Mixing — SUPERLITE roof fill concrete may be mixed in standard concrete or plaster mixers at job or in conventional truck mixers. Place in mixer: water, air entraining admixture and Portland cement, in that order. Permit slurry to form; then add SUPERLITE aggregate.

Note: In job mixes, recommended mixing time shall be approximately 2 minutes, or until desired wet density is reached. In truck mixing, total mixing time shall be 12 to 15 minutes, or until wet density is reached.

4. Forms — Use compressible expansion joints at parapet wall; also for every 100 ft. of concrete.

5. Placing — Concrete should be carefully deposited and screeded as soon as possible after mixing. Rodding, tamping or vibration shall not be used unless so specified. Concrete shall NOT be placed when temperature is lower than 40 F.

6. Curing — During curing period, protect concrete from freezing and from drying too rapidly. Keep traffic off concrete until necessary strength has developed. Take precautions consistent with good job practice.

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